

WHAT IS CLAIMED IS:

1. A bone plate assembly comprising:
a fixation plate having a longitudinal axis along said plate, a locking plate, and a bone fastener wherein the fixation plate can be fixed by at least said bone fastener to a bone, and
wherein the locking plate is secured to the fixation plate and is longitudinally adjustable along said longitudinal axis from a first position wherein the bone fastener can be fixed to said bone to a second position in which the bone fastener is locked into position by the locking plate.
2. A bone plate assembly as set forth in claim 1, wherein said locking plate has only limited vertical and longitudinal freedom relative to the fixation plate.
3. A bone plate assembly as set forth in claim 2, wherein the longitudinal freedom is defined by a sliding connection between the locking plate and the fixation plate.
4. A bone plate assembly as set forth in claim 3, wherein the fixation plate has a bottom surface which faces the bone and a top surface spaced therefrom, and the sliding connection is formed by providing opposing shoulders in the top surface of the fixation plate so as to define a guide way for the locking plate.
5. A bone plate assembly as set forth in claim 3, wherein the vertical freedom is defined by a lock screw which extends through an opening in the locking plate to secure the locking plate to the fixation plate.
6. A bone plate assembly as set forth in claim 5, wherein the distance between the first position and the second position defines a longitudinal play and said opening in said locking plate is a slot having a first end opposing a second end which together define the longitudinal play of the locking plate relative to the fixation plate.

7. A bone plate assembly as set forth in claim 6, wherein said locking plate has an exterior surface and said slot includes a counter sink.

8. A bone plate assembly as set forth in claim 6, wherein said locking plate has an exterior surface and said slot includes a counter sink which enables the lock screw to sink substantially flush with the exterior surface of the locking plate.

9. A bone plate assembly as set forth in claim 5, wherein the lock screw engages a threaded bore within the locking plate and extends through a hole in the fixation plate, and further has means to restrain it from exiting the threaded hole of the fixation plate.

10. A bone plate assembly as set forth in claim 1, wherein said locking plate can simultaneously lock multiple bone fasteners into position.

11. A bone plate assembly as set forth in claim 1, wherein said bone fasteners are screws.

12. A bone plate assembly as set forth in claim 1, wherein at least two bone fasteners are included and said locking plate can simultaneously lock all the bone fasteners of said fixation plate.

13. A bone plate assembly as set forth in claim 1, wherein a plurality of bone fasteners are used, and all of the bone fasteners of the fixation plate are aligned to enable them to be locked by the locking plate.

14. A bone plate assembly as set forth in claim 1, wherein said locking plate includes at least one opening for a bone fastener which is concentrically aligned with at least one opening for a bone fastener in said fixation plate when said locking plate is in a first position.

15. An implant for the spine, comprising:
a plate for stabilizing the spine, the plate having a number of openings;

a number of bone anchorage screws each operable to engage a corresponding one of the openings of the plate; and

means for blocking the screws including at least one slide mounted on the plate to selectively cover at least a part of at least one of the screws and means for retaining the slide on at least one of the screws, the slide cooperating with the retaining means.

16. The implant according to claim 14, wherein the plate defines a cavity and the slide is mounted within the cavity

17. A bone plate assembly comprising:

a fixation plate having a longitudinal axis along said plate, a washer, and a bone fastener wherein the fixation plate can be fixed by at least said bone fastener to a bone, and

wherein the washer is secured to the fixation plate and is longitudinally adjustable along said longitudinal axis from a first position wherein the bone fastener can be fixed to said bone to a second position in which the bone fastener is locked into position by the washer.

18. A bone plate assembly as set forth in claim 17, wherein said washer has only limited vertical and longitudinal freedom relative to the fixation plate.

19. A bone plate assembly as set forth in claim 18, wherein the longitudinal freedom is defined by a sliding connection between the washer and the fixation plate.

20. A bone plate assembly as set forth in claim 19, wherein the fixation plate has a bottom surface which faces the bone and a top surface spaced therefrom, and the sliding connection is formed by providing opposing shoulders in the top surface of the fixation plate so as to define a groove for the washer.

21. A bone plate assembly as set forth in claim 19, wherein the vertical freedom is defined by a lock screw which extends through an opening in the washer to secure the washer to the fixation plate.

22. A bone plate assembly as set forth in claim 21, wherein the distance between the first position and the second position defines a longitudinal play and said opening in said washer is a slot having a first end opposing a second end which together define the longitudinal play of the washer relative to the fixation plate.

23. A bone plate assembly as set forth in claim 22, wherein said washer has an exterior surface and said slot includes a counter sink.

24. A bone plate assembly as set forth in claim 22, wherein said washer has an exterior surface and said slot includes a counter sink which enables the lock screw to sink substantially flush with the exterior surface of the washer.

25. A bone plate assembly as set forth in claim 21, wherein the lock screw engages a threaded bore within the washer and extends through a hole in the fixation plate, and further has means to restrain it from exiting the threaded hole of the fixation plate.

26. A bone plate assembly as set forth in claim 17, wherein said washer can simultaneously lock multiple bone fasteners into position.

27. A bone plate assembly as set forth in claim 17, wherein said bone fasteners are screws.

28. A bone plate assembly as set forth in claim 17, wherein at least two bone fasteners are included and said washer can simultaneously lock all the bone fasteners of said fixation plate.

29. A bone plate assembly as set forth in claim 17, wherein a plurality of bone fasteners are used, and all of the bone fasteners of the fixation plate are aligned to enable them to be locked by the washer.

30. A bone plate assembly as set forth in claim 17, wherein said washer

includes at least one opening for a bone fastener which is concentrically aligned with at least one opening for a bone fastener in said fixation plate when said washer is in a first position.

31. A bone plate assembly comprising:

a fixation plate having a longitudinal axis along said plate, a retainer mechanism, and a bone fastener wherein the fixation plate can be fixed by at least said bone fastener to a bone, and

wherein the retainer mechanism is secured to the fixation plate and is longitudinally adjustable along said longitudinal axis from a first position wherein the bone fastener can be fixed to said bone to a second position in which the bone fastener is locked into position by the retainer mechanism.

32. A bone plate assembly as set forth in claim 31, wherein said retainer mechanism has only limited vertical and longitudinal freedom relative to the fixation plate.

33. A bone plate assembly as set forth in claim 32, wherein the longitudinal freedom is defined by a sliding connection between the retainer mechanism and the fixation plate.

34. A bone plate assembly as set forth in claim 33, wherein the fixation plate has a bottom surface which faces the bone and a top surface spaced therefrom, and the sliding connection is formed by providing opposing shoulders in the top surface of the fixation plate so as to define a groove for the retainer mechanism.

35. A bone plate assembly as set forth in claim 33, wherein the vertical freedom is defined by a lock screw which extends through an opening in the retainer mechanism to secure the retainer mechanism to the fixation plate.

36. A bone plate assembly as set forth in claim 35, wherein the distance between the first position and the second position defines a longitudinal play and said opening in said retainer mechanism is a slot having a first end opposing a second end

which together define the longitudinal play of the retainer mechanism relative to the fixation plate.

37. A bone plate assembly as set forth in claim 36, wherein said retainer mechanism has an exterior surface and said slot includes a counter sink.

38. A bone plate assembly as set forth in claim 36, wherein said retainer mechanism has an exterior surface and said slot includes a counter sink which enables the lock screw to sink substantially flush with the exterior surface of the retainer mechanism.

39. A bone plate assembly as set forth in claim 35, wherein the lock screw engages a threaded bore within the retainer mechanism and extends through a hole in the fixation plate, and further has means to restrain it from exiting the threaded hole of the fixation plate.

40. A bone plate assembly as set forth in claim 31, wherein said retainer mechanism can simultaneously lock multiple bone fasteners into position.

41. A bone plate assembly as set forth in claim 31, wherein said bone fasteners are screws.

42. A bone plate assembly as set forth in claim 31, wherein at least two bone fasteners are included and said retainer mechanism can simultaneously lock all the bone fasteners of said fixation plate.

43. A bone plate assembly as set forth in claim 31, wherein a plurality of bone fasteners are used, and all of the bone fasteners of the fixation plate are aligned to enable them to be locked by the retainer mechanism.

44. A bone plate assembly as set forth in claim 31, wherein said retainer mechanism includes at least one opening for a bone fastener which is concentrically

aligned with at least one opening for a bone fastener in said fixation plate when said retainer mechanism is in a first position.